

Paper for Consideration by TSMAD and DIPWG

Text Placement in S-101

<i>Submitted by:</i>	UK
<i>Executive Summary:</i>	This paper presents the requirement for text placement in S-101. It proposes an approach for incorporating cartographic text information into the S-101 Feature Catalogue.
<i>Related Documents:</i>	1. TSMAD18-16.3C S-101 Text Placement
<i>Related Projects:</i>	1. S-101 (Phase 2)

Introduction / Background

1. The requirement for text placement in S-101 stems from the cluttered appearance of text in ECDIS. Often text overlaps and clashes with features of significance and may obscure the mariner's route. On paper charts a cartographer offsets and adjusts text to ensure that features are clear and text is positioned where it is visible but does not affect the mariners' view of other features or their likely route. Letting ECDIS manufacturers implement automatic routines for text placement may lead to inconsistent display and extra processing work for ECDIS. Therefore it is accepted that attributes will be included in S-101 datasets to support text placement. This paper seeks to identify what those attributes are and how they will be carried in ENC data.

Analysis/Discussion

2. On the paper chart text can be placed, rotated and even curved or stretched. However an ENC may be displayed at angles other than north-up and therefore only positioning/sizing and spacing of text is possible. In order to reduce clashing, text can be offset to a specific position, about which it can be rotated without significantly impacting other features. As a result of rotation any offset text may be some distance from the feature it relates to, using this approach a reference line would need to be drawn to link features to their associated text. In order to control the display of text with scale SCAMIN and SCAMAX could be applied independently of the feature this would improve the control of text display further. However to ensure the user retains full control over text display this may need to be applied as an optional setting.

Two approaches could be taken for S-101;

Complex Attribute

With this approach a complex attribute exists for each attribute which is displayed as text; it carries the text string and parameters to control the text size and spacing. It also carries X and Y offsets for the text centre point from the feature. Attributes;

- STRING, The text string to be displayed
- XOFFSET, The x offset from the feature's centroid
- YOFFSET, The y offset from the feature's centroid
- XTXSIZ, The font size of the text
- SPACE, Text Spacing
- JUSTH, Horizontal Justification
- JUSTV, Vertical Justification

Feature

A separate feature for cartographic text would carry a text string attribute and attributes to define text size and spacing. SCMAIN and SCMAX could also be included to control text display independent of the feature. The geometry of the cartographic text feature would provide the centre point for the text. A feature association would link the text feature to the feature it relates to.

The following attributes would be included in order to refine the display of text;

STRING, The text string to be display

TXTSIZ, The font size of the text

SPACE, Text Spacing

JUSTH, Horizontal Justification

JUSTV, Vertical Justification

3. Although both approaches have advantages and disadvantages the Feature based approach would result in many feature associations which would increase data volume. However this approach would simplify portrayal.

Conclusion

4. In order to provide consistent display across ECDIS systems it is necessary to include cartographic text attribute values in the ENC dataset. This paper suggests attribute values that would support text placement in ENCs and proposes two options for how this information might be included.

Action Required of TSMAD

- Agree that cartographic attributes should be included in ENC datasets (where required) in order to support text display.
- Discuss the additional attributes suggested and agree which are required.
- Discuss the proposed use of a complex attribute or a separate feature to carry this information.